

### Prospective Study of *Candida* sp. Bloodstream Infection Rates and Susceptibility Profile in a Tertiary Hospital in Salvador, Brazil: 2003–2007

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**Background of the study:** To estimate *Candida* sp. bloodstream infection rates from 2003 through 2007 along with the definition of species and antifungal susceptibility profile of the isolates.

**Methods:** Setting: Private tertiary facility in Salvador, Brazil. Study type: Laboratory-based prospective study started in January 2003 and ended in December 2007 of all isolates of *Candida* sp. Blood cultures were processed in BacT/ALERT and positive cultures were plated in Chocolate Agar, incubated in microaerophilia at 35 °C for 18–24 hours. Gram-stained cultures showing yeasts were emulsified in 0.5 mL of human serum, incubated at 37 °C for 2 hours and a drop of the mixture was examined microscopically for the presence of germ tubes. The colonies were sent to a Reference Laboratory in Sao Paulo (Fleury Medicina Diagnostica, Sao Paulo) where the microorganisms were identified using VITEK System (BioMerieux) and antifungal susceptibility tests done using E-tests for Amphotericin B, Fluconazole, and Itraconazole (E-test, AB Disk). All criteria were based in NCCLS/CLSI M27A. Just the first episode of candidemia was considered for each patient. Subsequent episodes for the same patient were not included in the present study. Sex, age, and discharge informations were collected.

**Results:** 72 patients had positive blood cultures for *Candida* sp. during the study period. Age and sex distribution: 40 male, 32 female. Median age was 69 yr-old. Most patients - 53% - were at the ICU at the time of diagnosis. Distribution of *Candida* isolates: 45.8% *albicans*; 23.6% *tropicalis*; 13.9% *parapsilosis*; 2.8% *glabrata*; 1.4% *guilliermondii*; 1.4% *famata*; 9.7% *spp.* Antifungal susceptibility: Amphotericin-B 98.3%; Fluconazole 94.9%; Itraconazole 95.6%.

**Conclusion:** In our prospective study the non-*albicans* species predominated in episodes of candidemia. We found a low resistance profile for azoles probably due to the low frequency of isolates of *Candida krusei* and *Candida glabrata* in our sample.

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64.066

### Implementation of Basic Infection Control Guidelines in Major Hospitals of Karachi-Pakistan

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**Objective:** To assess the status of implementation of fundamental infection control guidelines.

**Methods:** We conducted a cross sectional survey of 20 hospitals having more than 100 beds in the year 2007.

20 facilities were 8329. Although 95% of facilities have Infectious Diseases Physicians and 90% microbiologists only 20% have one IC Nurse irrespective on number of beds. Twenty percent have an Infection Control Committee. Only 10% hospitals have a designated Infection Control Doctor. Only one hospital compiles IC reports which are kept confidential and shared only with hospital CEO or equivalent authority. Only three incidents of investigations for nosocomial infection outbreaks were conducted by two hospitals during last year and findings not disclosed. Incidences of hospital acquired infections are calculated by only one hospital but findings are kept confidential. Hand washing facilities were available at easily accessible locations in only 2 facilities and alcohol hand rubs at one. Hand hygiene training to health care providers was provided by 2 hospitals occasionally. One hospital reported having an antibiotic prescribing policy but it was only partially implemented. Antibiotic susceptibility was performed by 18 (90%) facilities. Infection prevention and control training was not provided to health care professionals regularly by any facility. Information on hand hygiene, antibiotic consumption and infection prevention was not provided to patients or visitors by any facility.

**Conclusion:** Importance of Infection Control is not realized by majority of hospitals as less than 10% facilities implement standard recommendations. Peri operative and post operative antibiotic use is very high and post operative infections are quite common. Implementation of Infection Control Guidelines is highly desirable.

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### Knowledge and Performance Toward Universal Precautions Among Nurses in University-Affiliated Hospitals of Mazandaran, Iran

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**Objective:** Health care workers (such as nurses, midwives and auxiliary nurses) have great risk of occupational hazards as they perform their clinical activities in the hospitals. Universal and standard precautions are a set of guidelines aim to protect them against blood-borne infections and the other hazardous infectious agents. The purpose of this study was to investigate the knowledge and performance of nurses regarding isolation precautions and universal precaution in Mazandaran University affiliated hospitals in Iran.

**Method:** In this cross-sectional study, knowledge and performance related to universal precaution among nurses of 10 hospitals in Mazandaran state were assessed using a questionnaire. The questionnaire was designed by infectious disease specialist based on standard precaution guideline approved by CDC. In each hospital, at first, infection control's nurse monitored their practice, and then the participant nurses filled the questionnaire by themselves. The statistical analysis was performed by using SPSS -10.

**Results:** A total of 400 nurses (352 female and 48 male) participated in our study. Response to knowledge and perfor-

mance questions concerning universal precaution in general were acceptable in accordance with the CDC guidelines (mean score approximate 73.62% and 70.6% respectively). no significant correlation was found between age, sex, marital status and previous education about infection control. Also we found a positive linear correlation between knowledge and practice level. The level of performance was decreased in higher educational levels.

**Conclusion:** Specific training programs may have to target all of the nurses regularly to establish acceptance of appropriate practices that will enable them to adopt and adhere to universal precaution while their older counterparts may require more intense continuous assistance.

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**The Effect of Extended-Spectrum Beta-Lactamase Production On Antimicrobial Suceptibility Figures Among *Escherichia coli* and other Enterobacteriaceae Isolated in one Year of Prospective Hospital Surveillance Program**

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**Background:** The increased rate of antimicrobial resistance among Gram-negative rods and all Enterobacteriaceae as whole is a major concern, especially in the hospital setting. A prospective microbiological surveillance of antimicrobial susceptibility rates of all relevant pathogens is ongoing at our Hospital, together with an analysis of the relationship with the emergence of extended-spectrum beta-lactamase secretion.

**Materials-Methods:** The temporal variations of in vitro antimicrobial sensitivity rates were assessed at quarterly intervals for all suitable *Escherichia coli* strains and other Enterobacteriaceae, during the year 2007. The same pathogen cultured more than once from the same patient within one month, has been considered one time only.

**Results:** Among *Escherichia coli* isolates (493 strains tested on the whole), imipenem tested *in vitro* effective in 100% of cases, followed by piperacillin-tazobactam (86.6–90.6% of tested strains), nitrofurantoin (86.1–91.7% of strains), ceftazidime (75.8–79.8%), cefotaxime (75.7–79.8%), co-amoxiclav (61.7–69.8%), ciprofloxacin (61.0–64.3%), and norfloxacin (64.5–70.2%). Both cefotaxime and ceftazidime sensitivity (affected by the production of extended-spectrum beta-lactamases), had a drop from a 79.8% mean susceptibility rate of the first quarter of year 2007, to a mean 75.7% of the last quarter of the year. With regard to Enterobacteriaceae as a whole (other than *Escherichia coli*), among 753 comprehensive isolates, both imipenem and colistin retained full (100%) in vitro activity, followed by piperacillin-tazobactam (72.5–81.5% of tested strains), cotrimoxazole (71.6–77.6%), gentamicin (71.6–76.1%), ciprofloxacin (64.1–68.6%), ceftazidime (60.8–64.5%), norfloxacin (60.2–69.8%), and cefotaxime (59.7–62.7%), with cephalosporins moderately affected by

extended-spectrum beta-lactamase production, although in absence of significant temporal modifications.

**Conclusions:** Prospective surveillance studies of in vitro antimicrobial sensitivity rates of some relevant hospital-associated organisms like *Escherichia coli* and Enterobacteriaceae are an useful guidance to plan antibiotic treatment and prophylaxis, on local and regional basis. This last Gram-negative organism group also allows a reliable study of the temporal trend of extended-spectrum beta-lactamase production, which significantly affects the activity of multiple broad-spectrum antimicrobial compounds.

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## Parasitology (Poster Presentation)

65.001

**Prevalence of Intestinal Parasites and Related Factors in Primary Schools Children, Varamin City, Iran**

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Intestinal parasitic diseases, especially among children, are very common in Iran, and the statistic shows that the prevalence of these pathogens among primary school students, in comparison with other age group, is more common. For the purpose of determining the rate of the outbreak of these pathogens in the city of Varamin, the students at primary schools in the academic year 1999–2000 were studied. The method of research was descriptive and the technical study was observational - interviewing. The simple sampling method was carried out over 293 students at primary schools in the city of Varamin. The samples were tested by direct Laboratory methods and sedimentary concentration. For the purpose of finding cryptosporidium, Ziel Nelson modified method (88 samples out of total samples) was used. Out of 293 primary students, 139 students (47%) for intestinal parasitism were reported positive of which 116 students (83%) had one parasite, 21 students (15%) had two parasites and 2 students (2%) had 3 parasites. *Giardia* contamination was seen in 78 cases (49 percents) which has shown highest contamination. From cryptosporidium point of view 88 samples were reported negative. There was no significant difference among students of rural and urban schools for parasitism. There was no significant difference between sexes and the rate of contamination. There was a significant difference between mother's and father's occupation with the rate of contamination among students and that based on tchouprov test the above said correlation found to be weak (14 and 15 percents respectively). There was a significant difference between parent's educational level and the rate of contamination. All students were drinking hygienic water (from Pipeline) and 99% of these students were washing their hands with soap and water after using toilet.

This study suggested that there was significant relationship and weak correlation between mother & father occupations and the rate of contamination among students and also a significant difference, existed between parents educational level with the result of stool examination and this has shown the importance of awareness